Northern Rocky Mountain Science Center
U.S. Department of the Interior
Geological Survey

Cooperative Study Examines the Implications of Mining in the Transboundary Flathead Basin Aquatic Ecosystem.

Background:

Research conducted by the USGS Northern Rocky Mountain Science Center (NOROCK) and several partnering agencies demonstrates that the Transboundary Flathead Basin in Montana (U.S.) and British Columbia (Canada) hosts one of the most diverse and unique native aquatic ecosystems throughout North America. Headwaters of the basin feed into Waterton-Glacier International Peace Park (U.S. and Canada) and Flathead Lake in the U.S.

Despite the tremendous historical and ecological value of the region, the Canadian headwaters are targeted for coalbed methane drilling and open-pit coal mining. This can threaten water and habitat quality, migratory fish populations, and all aquatic life downstream.

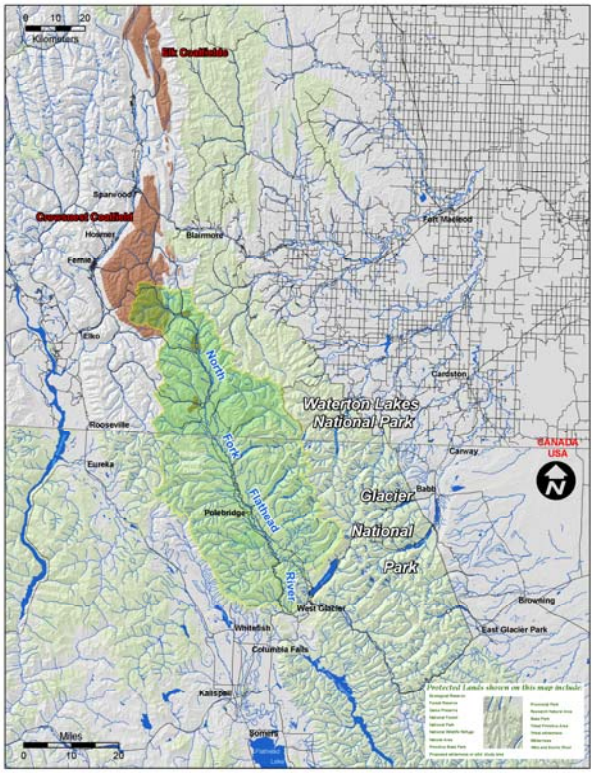
In 2008 NOROCK is leading an international aquatics research project to help the U.S. prepare to meet this challenge and protect the ecosystems of one of the Crown Jewels of our National Park System and the irreplaceable and extraordinary international value of the Transboundary Flathead Basin Ecosystem.

Collaborators:

This is a cooperative project with Montana Fish, Wildlife and Parks, the University of Montana, the State of Montana, BC Ministry of Environment, and the Ktunaxa (too-nah-hah) First Nation of Southeast British Columbia to manage a shared transboundary watershed.

Study Area:

The Transboundary Flathead Basin comprises the North Fork of the Flathead River, which flows across the U.S.-Canadian border just over the divide from Glacier National Park. The map below shows the study area. Potential mining development is shaded in brown.



Map courtesy of Glacier National Park.

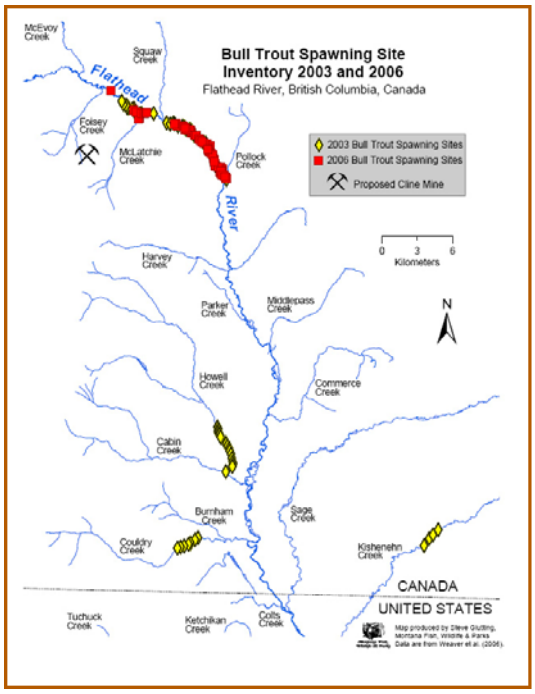


Figure 1. The spawning and movement of bull trout in the Transboundary Flathead Basin.

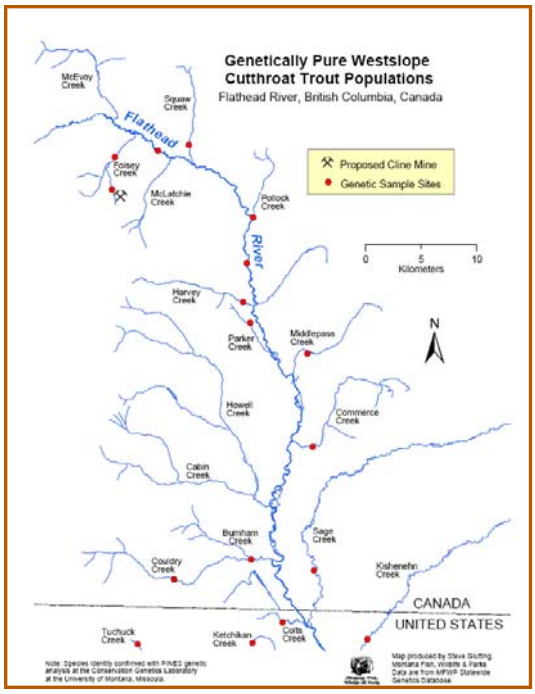


Figure 2. The location of genetically pure cutthroat trout in the Transboundary Flathead Basin.

Project:

A history of coal mining and coalbed methane extraction in the nearby Elk River in Canada and preliminary data from the North Fork of the Flathead River strongly suggest that sediment and water pollution from proposed mining activities may degrade waters downstream, thus posing a threat to the shared environment of the Transboundary Flathead, Waterton-Glacier International Peace Park, the Flathead Valley and Flathead Lake.

The Flathead basin is recognized as a stronghold for native trout in the northern Rocky Mountains, including the threatened bull trout and westslope cutthroat trout. Research conducted by NOROCK shows that a majority of bull and cutthroat trout migrate up to 250 km from Flathead Lake to spawn in the Canadian headwaters—the same areas proposed for gas and oil development.

Westslope cutthroat trout.

The status of these transboundary fish populations and their habitats are not known. This project will assess the distribution, abundance, life-history, and genetic characteristics of native fishes in Glacier National Park and the Canadian portion of the drainage over the next five years. These baseline data will be used as a reference point for long-term population and habitat monitoring prior to potential mining or coalbed methane development.

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The Northern Rocky Mountain Science Center is located in Bozeman, Montana and includes three field stations in Montana and one duty station in Wyoming. For more information on NOROCK's research, please visit http://nrmsc.usgs.gov or contact the Center Director: Jeff Kershner 406-994-5304 or jkershner@usgs.gov